

Ambient Air Monitoring Report

***Federal Mine Tailings Site
Park Hills, Missouri***

The Doe Run Company

First Quarter 2013



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Ambient Air Monitoring Report

***Federal Mine Tailings Site
Park Hills, Missouri***

The Doe Run Company

First Quarter 2013





July 22, 2013

Mr. Mark Nations
The Doe Run Company
P.O. Box 1633
Desloge, Missouri 63601

Re: Ambient Air Monitoring Report – Federal Site

Dear Mr. Nations:

Please find attached the First Quarter 2013 "*Ambient Air Monitoring Report*" for The Doe Run Company at the Federal Site, located near Park Hills, Missouri.

Sites included in this report are Big River #4, Big River #4 QA, Site #1 at the Water Treatment Plant, and Site #4 at St. Joe Park. Federal Site #1 at the Water Treatment Plant is the same monitoring site as National #3 East – WTP, as listed in the Lab Results section of this report. Monitoring at Site #4 began on January 23, 2013 for lead and TSP and on January 25, 2013 for PM₁₀.

This report will include the following:

- **Glossary of Terms** – Listing of the abbreviations used for each parameter and unit.
- **National Ambient Air Quality Standards** – Lists the maximum allowable concentrations for the measured parameters.
- **Quarterly Missing Data Summary** – Listing of missing particulate run days.
- **Quarterly Data Summary** – Includes the averages of each monitored parameter, which relates to the federal standard.

Barr Engineering Company offers this report as an independent laboratory. This includes the weighing of filters, obtaining lead and cadmium analysis, compiling the data, and preparing the report. No interpretation of the data or analysis of the results is implied or intended. Should you have any questions regarding this report, please call.

Respectfully,

A handwritten signature in black ink, appearing to read "Richard J. Campbell".

Richard J. Campbell, PE
Chemical Engineer
Senior Environmental Consultant

c: Mr. Bob Hinkson
Mr. Jason Gunter
Mr. Ty Morris

GLOSSARY OF TERMS

$\mu\text{g}/\text{m}^3$	Micrograms per Cubic Meter
TSP	Total Suspended Particulate
PM ₁₀	Particulate Matter - 10 Microns or Less
mmHg	Millimeters of Mercury

NATIONAL AMBIENT AIR QUALITY STANDARDS (NAAQS)

PM ₁₀ – Particulate Matter	24-Hour*	Annual Maximum	150 $\mu\text{g}/\text{m}^3$
Lead	Calendar Quarter	Arithmetic Mean	1.5 $\mu\text{g}/\text{m}^3$

TSP (Total Suspended Particulate) – There are no Federal Standards that apply solely for TSP.

*This standard must be exceeded more than once a year to constitute a violation.

QUARTERLY MISSING DATA SUMMARY

TSP/Lead Summary

Federal Sites #1 and #2 – 1/1/2013 – Holiday – No samples scheduled

Big River #4 QA – 1/24/2013 – INVALID – Mechanical Failure

All Sites – 2/22/2013 – Inclement Weather – No samples taken

Federal Site #4 St. Joe Park – 2/27/2013 – Blank Filter QA

All Sites – 3/7/2013 – Training – No samples scheduled

PM₁₀ Summary

Federal Sites #1 and #2 – 1/1/2013 – Holiday – No samples scheduled

All Sites – 2/24/2013 – Inclement Weather – No samples taken

Federal Site #4 St. Joe Park – 2/27/2013 – Blank Filter QA

Federal Site #4 St. Joe Park – 3/2/2013 – INVALID – Mechanical Failure

Particulate and Lead Quarterly Summary



TSP and Lead Concentration Summary

Federal
Park Hills, Missouri

2013

Date	TSP #1 - Water Plant ($\mu\text{g}/\text{m}^3$)	TSP #2 - Big River #4 ($\mu\text{g}/\text{m}^3$)	TSP #4 - St. Joe Park ($\mu\text{g}/\text{m}^3$)	LEAD #1 - Water Plant ($\mu\text{g}/\text{m}^3$)	LEAD #2 - Big River #4 ($\mu\text{g}/\text{m}^3$)	LEAD #4 - St. Joe Park ($\mu\text{g}/\text{m}^3$)
1/2/13	15	15		0.016	0.055	
1/3/13	16	20		0.023	0.018	
1/4/13	17	16		0.022	0.013	
1/7/13	17	26		0.011	0.030	
1/8/13	9	9		0.009	0.000	
1/9/13	15	19		0.017	0.020	
1/10/13	3	3		0.000	0.000	
1/11/13	5	6		0.000	0.000	
1/14/13	24	47		0.014	0.044	
1/15/13	28	47		0.011	0.056	
1/16/13	18	19		0.015	0.020	
1/17/13	14	26		0.009	0.042	
1/18/13	7	10		0.000	0.007	
1/21/13	16	41		0.024	0.061	
1/22/13	19	33		0.014	0.015	
1/23/13	31	33	39	0.020	0.019	0.023
1/24/13	30	43	28	0.018	0.025	0.009
1/25/13	35	43	34	0.037	0.018	0.013
1/28/13	12	12	13	0.000	0.000	0.000
1/29/13	6	8	13	0.000	0.000	0.015
1/30/13	11	7	8	0.043	0.000	0.007
1/31/13	8	14	17	0.027	0.007	0.016
Monthly Average	16	23	22	0.015	0.020	0.012

QUARTERLY LEAD NAAQS LIMIT: $1.5 \mu\text{g}/\text{m}^3$

Please see the particulate analysis sheets for explanations of missing or invalid data.

Note 1: A summary of the Big River #4 sampler data is also included, because it was part of the QA plan.

Note 2: A summary of the National #3 East - WTP sampler data is included because it is the same sampling site as Federal #1 Water Plant.

Note 3: Sampling for Federal at #4 St. Joe Park began on January 25, 2013.



TSP and Lead Concentration Summary

Federal
Park Hills, Missouri

2013

Date	TSP #1 - Water Plant ($\mu\text{g}/\text{m}^3$)	TSP #2 - Big River #4 ($\mu\text{g}/\text{m}^3$)	TSP #4 - St. Joe Park ($\mu\text{g}/\text{m}^3$)	LEAD #1 - Water Plant ($\mu\text{g}/\text{m}^3$)	LEAD #2 - Big River #4 ($\mu\text{g}/\text{m}^3$)	LEAD #4 - St. Joe Park ($\mu\text{g}/\text{m}^3$)
2/1/13	8	7	10	0.009	0.008	0.022
2/4/13	20	19	17	0.025	0.046	0.046
2/5/13	19	15	19	0.071	0.017	0.019
2/6/13	14	19	16	0.000	0.000	0.000
2/7/13	13	12	24	0.000	0.000	0.022
2/8/13	9	9	11	0.000	0.000	0.000
2/11/13	8	10	9	0.010	0.009	0.000
2/12/13	12	16	14	0.000	0.011	0.000
2/13/13	13	8	11	0.023	0.016	0.029
2/14/13	14	20	11	0.014	0.035	0.000
2/15/13	12	35	11	0.008	0.050	0.000
2/18/13	12	12	55	0.024	0.012	0.139
2/19/13	13	23	12	0.042	0.025	0.000
2/20/13	20	28	18	0.008	0.014	0.000
2/21/13	4	10	10	0.006	0.009	0.008
2/25/13	11	14	18	0.000	0.006	0.029
2/26/13	5	4	5	0.000	0.000	0.000
2/27/13	10	10	6	0.011	0.000	0.000
2/28/13	7	7	7	0.000	0.000	0.000
Monthly Average	12	15	15	0.013	0.014	0.017

QUARTERLY LEAD NAAQS LIMIT: $1.5 \mu\text{g}/\text{m}^3$

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TSP and Lead Concentration Summary

Federal
Park Hills, Missouri

2013

Date	TSP #1 - Water Plant ($\mu\text{g}/\text{m}^3$)	TSP #2 - Big River #4 ($\mu\text{g}/\text{m}^3$)	TSP #4 - St. Joe Park ($\mu\text{g}/\text{m}^3$)	LEAD #1 - Water Plant ($\mu\text{g}/\text{m}^3$)	LEAD #2 - Big River #4 ($\mu\text{g}/\text{m}^3$)	LEAD #4 - St. Joe Park ($\mu\text{g}/\text{m}^3$)
3/1/13	3	3	7	0.000	0.000	0.000
3/4/13	20	34	26	0.000	0.010	0.020
3/5/13	20	18	16	0.088	0.017	0.010
3/6/13	17	20	15	0.025	0.025	0.019
3/8/13	14	19	21	0.000	0.011	0.024
3/11/13	8	5	7	0.015	0.000	0.000
3/12/13	14	9	10	0.051	0.008	0.011
3/13/13	13	16	13	0.023	0.031	0.016
3/14/13	19	20	43	0.009	0.009	0.110
3/15/13	158	185	73	0.044	0.011	0.032
3/18/13	11	10	9	0.025	0.000	0.007
3/19/13	10	9	8	0.012	0.010	0.007
3/20/13	18	21	15	0.065	0.027	0.013
3/21/13	14	23	16	0.006	0.013	0.007
3/22/13	20	22	18	0.008	0.012	0.011
3/25/13	4	3	5	0.007	0.000	0.000
3/26/13	10	10	11	0.013	0.019	0.009
3/27/13	19	24	20	0.016	0.037	0.018
3/28/13	25	28	27	0.011	0.009	0.020
3/29/13	18	23	20	0.010	0.009	0.013
Monthly Average	22	25	19	0.021	0.013	0.017
Quarterly Average	17	21	19	0.016	0.016	0.015
QUARTERLY LEAD NAAQS LIMIT: $1.5 \mu\text{g}/\text{m}^3$						

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Note 3: Sampling for Federal at #4 St. Joe Park began on January 25, 2013.

PM₁₀ Quarterly Summary



Particulate Summary

Federal Park Hills, Missouri

2013

Date	PM ₁₀ #1 - Water Plant ($\mu\text{g}/\text{m}^3$)	PM ₁₀ #2 - Big River #4 ($\mu\text{g}/\text{m}^3$)	PM ₁₀ #4 - St. Joe Park ($\mu\text{g}/\text{m}^3$)	PM ₁₀ NAAQS ($\mu\text{g}/\text{m}^3$)
4-Jan	13	14		150
7-Jan	9	12		150
10-Jan	5	5		150
13-Jan	8	8		150
16-Jan	12	12		150
19-Jan	9	7		150
22-Jan	9	22		150
25-Jan	26	26	26	150
28-Jan	11	11	12	150
31-Jan	7	8	15	150
Monthly Average	11	12	18	

Please see the particulate analysis sheets for explanations of missing or invalid data.

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Particulate Summary

Federal Park Hills, Missouri

2013

Date	PM ₁₀ #1 - Water Plant ($\mu\text{g}/\text{m}^3$)	PM ₁₀ #2 - Big River #4 ($\mu\text{g}/\text{m}^3$)	PM ₁₀ #4 - St. Joe Park ($\mu\text{g}/\text{m}^3$)	PM ₁₀ NAAQS ($\mu\text{g}/\text{m}^3$)
3-Feb	5	6	4	150
6-Feb	7	13	9	150
9-Feb	9	10	9	150
12-Feb	9	12	10	150
15-Feb	6	8	6	150
18-Feb	6	7	5	150
21-Feb	9	10	11	150
27-Feb	10	10	12	150
Monthly Average	8	9	8	

Please see the particulate analysis sheets for explanations of missing or invalid data.

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Particulate Summary

Federal Park Hills, Missouri

2013

Date	PM ₁₀ #1 - Water Plant ($\mu\text{g}/\text{m}^3$)	PM ₁₀ #2 - Big River #4 ($\mu\text{g}/\text{m}^3$)	PM ₁₀ #4 - St. Joe Park ($\mu\text{g}/\text{m}^3$)	PM ₁₀ NAAQS ($\mu\text{g}/\text{m}^3$)
2-Mar	5	6	INVALID	150
5-Mar	10	11	12	150
8-Mar	10	14	12	150
11-Mar	8	6	7	150
14-Mar	9	13	18	150
17-Mar	3	3	4	150
20-Mar	6	8	7	150
23-Mar	16	15	17	150
26-Mar	4	4	6	150
29-Mar	14	19	15	150
Monthly Average	9	10	11	
Quarterly Average	9	11	12	

Please see the particulate analysis sheets for explanations of missing or invalid data.

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Note 3: Sampling for Federal at #4 St. Joe Park began on January 25, 2013.

Quarterly Quality Control



120 East Davis Street
P.O. Box 30
Fayette, MO 65248-0030

Phone: (660) 248-1911
Fax: (660) 248-1921
<http://www.inovatia.com>

ANALYSIS REPORT

Client Information:

Barr Engineering
5150 W. 76th Street
Edina, MN 55439

Project Name: Quarterly QC Samples
Quarter-Year: Q1-2013
Sample Matrix: Filter

Analysis Method: 40 CFR §58 Appendix A/40 CFR §50 Appendix G

Lab Number	Observed Value (µg Pb/Filter)	Actual Value (µg Pb/Filter)	Difference (+/-)	Difference (%)	% Difference Average (%)	Standard Deviation	95% Probability Limit (+)	95% Probability Limit (-)	Analyst-Date
20A	19.417	20	-0.583	-2.915%					DS-01/24/13
20B	19.260	20	-0.740	-3.700%					DS-02/28/13
20C	20.456	20	0.456	2.280%	-1.445%	3.250%	4.924%	-7.814%	DS-03/28/13
60A	60.786	60	0.786	1.310%					DS-01/24/13
60B	59.607	60	-0.393	-0.655%					DS-02/28/13
60C	62.318	60	2.318	3.863%	1.506%	2.266%	5.947%	-2.934%	DS-03/28/13

Submitted by:


Digitally signed by Jennifer
Vandelicht
DN: cn=Jennifer Vandelicht,
o=Inovatia Laboratories, LLC,
ou=Quality Assurance,
email=jvandelicht@inovaita.com,
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Date: 2013.04.02 15:36:26 -0500
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04/02/2013
Date

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